-METASYS®

Introduction

Introduction **Page 3**

- *Welcome to Configuration Tools* *3
- *System Requirements* *6
- *Knowledge Up-Front* *7

Getting Started **9**

- *Using a Mouse* 9
- *Using the Keyboard* *9

* Indicates those sections where changes have occurred since the last printing.

© 1998 Johnson Controls, Inc.

Introduction

Welcome to Configuration Tools

Welcome to Configuration Tools, the software that transforms the way you create control strategies. Configuration Tools, which includes HVAC PRO for Windows™ and a graphical tool for DX controllers, provides an intuitive and efficient work environment. Configuration Tools includes the following components:

- HVAC PRO for Windows
- ZT PRO
- LCP Graphic Configuration Tool
- GX-9100 for Windows Configuration Tool
- DX Commissioning
- NDM Configurator
- XTM Configurator
- Auxiliary Access
- ModemPRO

HVAC PRO for Windows

HVAC PRO for Windows is the standard Metasys® software tool used to create control strategies for the Air Handling Unit (AHU), Unitary (UNT) Controller, Variable Air Volume (VAV) Controller, Variable Air Volume Modular Assembly (VMA), Phoenix (PHX) Fume Hood, N2 Dialer Module (NDM), and Terminal Controller (TC) devices, as well as Original Equipment Manufacturer (OEM) applications (see Table 1). It is an efficient, easy-to-use programming tool for application engineers, system representatives, and facility operators. See the *Hardware Requirements* section of this technical bulletin for more information.

To learn more about controller features, refer to *Controller Access Technical Bulletin (LIT-6364013)* in this manual.

To learn more about OEM applications, refer to the *OEM* tab in this manual, and to *Phoenix Laboratory and Fume Hood Interface (LIT-6375005)* in this manual.

Table 1: OEM Applications Listing in HVAC PRO

OEM Applications
York® Rooftop
Phoenix Fume Hood
Reciprocating Chiller
McQuay® Chiller
McQuay Global Chiller
WaterFurnace
York VAV Rooftop
Pomona Air
Screw Chiller
Lennox Rooftop
Lennox TCB19

What HVAC PRO for Windows Provides

Use HVAC PRO for Windows to configure control strategies, which contain software points and processes. A software point represents and characterizes a field device (such as an Analog Input) or a data point (such as a Binary Data point). A process is a set of logical evaluations that determine when to perform an action, such as when to turn on a supply fan or enable a chiller. HVAC PRO for Windows translates each process into a process object, which is downloaded to and executed by the controller.

In addition to configuration utilities, HVAC PRO for Windows provides features to upload, upgrade, download, and commission controllers. For VMA devices, you can use the download feature to upgrade the controller firmware code. These utilities are described in detail later in this document. HVAC PRO for Windows is easy to use and quickly learned. Once you know the basics, you'll quickly move from window to window, efficiently programming your controller.

ZT PRO

ZT PRO software is part of Configuration Tools, and must be installed at the same time as HVAC PRO for Windows software. ZT PRO is described in this manual, after the *Zone Terminal* tab, in the *Zone Terminal Technical Bulletin (LIT-6375140)*.

LCP Graphical Configuration Tool

The LCP Graphical Configuration tool is used to configure and download Lab and Central Plant (LCP) controllers. LCP documentation is located in the *System 9100 Technical Manual (FAN 636.4)*, after the *LCP* tab.

GX-9100 for Windows Configuration Tool

The *GX-9100 Software Configuration Tool for Windows User's Guide (LIT-6364060)* is located in the *System 9100 Technical Manual (FAN 636.4)*, after the *DX-9100 and XT-9100* tab, in the *Programming and Commissioning* section.

DX Commissioning

The *DX Commissioning Using the Point Template Program User's Guide (LIT-6364080)* is located in the *System 9100 Technical Manual (FAN 636.4),* after the *DX-9100 and XT-9100* tab, in the *Programming and Commissioning* section.

NDM Configurator

The *NDM Configurator Application Note (LIT-6364090)* is located in the *System 9100 Technical Manual (FAN 636.4),* after the *Network Communications* tab.

XTM Configurator

XTM documentation is located in the *System 9100 Technical Manual (FAN 636.4),* after the *XTM/XPx* tab.

ModemPRO

ModemPRO enables you to set up modems, and is installed automatically as part of Configuration Tools. More information is available in ModemPRO online Help.

Auxiliary Access

Auxiliary Access is described in the *Controller Access Technical Bulletin (LIT-6364013)* in this manual.

About This Manual

This manual describes how to create, edit, upload, commission, and download control strategies with HVAC PRO for Windows. It is split into several sections:

Introduction--This section describes HVAC PRO for Windows system requirements, required knowledge, an overview of basic HVAC PRO for Windows screen components and procedures to get you started, Configuration Tools software installation, and controller access capabilities.

Using HVAC PRO for Windows--This section describes the basic sequences and procedures you need to perform to create controls strategies and use other features of HVAC PRO for Windows.

Controller Application Sections (AHU, UNT, VAV, VMA, TC)--These sections describe the various HVAC PRO for Windows applications you can use.

Zone Terminal--This section describes what you need to know to configure the Zone Terminal for the AHU, UNT, VAV, or PHX.

N2 Dial--This section describes what you need to know to configure and commission the N2 Dialer application.

Appendix--This section contains sideloop applications, VAV controller flow calculation constants, and HVAC PRO for Windows modules.

OEM--This section describes what you need to know to use the Reciprocating Chiller, the York 25-Ton VAV Rooftop Unit, and the WaterFurnace/Water Source Heat Pump applications. The *Phoenix Laboratory and Fume Hood Technical Bulletin* is in the front of this manual before the *Introduction* tab.

System Requirements

Before you use HVAC PRO for Windows, your Operator Workstation or standalone PC requires the following hardware and software.

Hardware Requirements

HVAC PRO for Windows requires the following hardware:

a personal computer with the Intel® 80386 (or higher) processor for graphing applications

1 Mb of memory (640K of conventional memory and 256K of extended memory). 2 Mb of memory are strongly recommended.

a hard drive with approximately 20 Mb of available disk space while Windows® is running

Note: If you install any of the DOS-based products packaged with HVAC PRO for Windows, you will need additional space. See the *Configuration Tools Software Installation Instructions* in this manual.

one diskette drive, 1.44 Mb high density, 3.5 inch

a designated RS-232 port (COM1 or COM2) for communicating with controllers

an interface to field hardware (AS-CBLPRO-n and/or MM-CVT101-n)

Hardware Options

This hardware is optional but highly recommended:

a Windows supported printer

a Windows supported mouse. A mouse dramatically increases controller configuration speed and allows you to take full advantage of HVAC PRO for Windows graphical configuration strategy.

Software Requirements

HVAC PRO for Windows requires the following software:

Configuration Tools program diskettes

Microsoft® Windows 3.1 or Windows 95

HVAC PRO for Windows/ Controller Compatibility

Use HVAC PRO for Windows to configure and commission all AHU, UNT, VAV, VMA, PHX, NDM, and TC controllers.

Knowledge Up-Front

The areas of knowledge and skill you must have to use HVAC PRO for Windows effectively are HVAC controls, PC operations, Windows features, and the specific controller you are programming.

HVAC Controls

To program with HVAC PRO for Windows, you must know the basic concepts and methods of HVAC control for commercial buildings. Also, you need to become familiar with the required control sequences before writing control strategies with HVAC PRO for Windows. The more familiar you are with the control needs, the easier it is to program with HVAC PRO for Windows.

PC Operation

To use HVAC PRO for Windows, you must have basic personal computer skills and knowledge of directories and files.

Windows Features

To use HVAC PRO for Windows, you must know the basic concepts and methods of Windows features, such as windows, icons, and pull-down menus. Refer to the *Microsoft Windows User's Guide* for basic Windows operation instructions.

Controller Products

If you are programming a controller within a Metasys or Companion™ Network, you also must be familiar with the functions and features of Metasys (or Companion) control systems, especially software points and processes. The VMA functions with a Metasys Network only. You need a general knowledge and understanding of Metasys (or Companion) terms and concepts. This knowledge is important in understanding how to program with HVAC PRO for Windows. For this information, consult the *Metasys Companion Technical Manual (FAN 628.1)* or the following areas of the *Metasys Network Technical Manual (FAN 636):*

Software Architecture

Hardware Architecture

Software Data Sheets

Getting Started

This section describes the ways you will navigate through HVAC PRO for Windows. You can use a keyboard or a mouse to perform all of the basic operations in Windows. However, we strongly recommend using a mouse for selecting menu options and moving from window to window as it is the more efficient method.

Using a Mouse

Mouse

Though you will sometimes use the keyboard to type information, the mouse is your primary tool for selecting menu options and moving from window to window. You will use only the left mouse button.

Here are a few guidelines for using your mouse. If you need more information on using a mouse with Windows, please see your Microsoft Windows manual.

Table 2: Using the Mouse

To	Do This
Point	Move the pointer so its tip rests on the item you want to select.
Click	Press and release the left mouse button.
Drag	Hold down the left mouse button while moving the pointer.
Double-click	Quickly click the left mouse button twice.

To select an item means to click on it. Selected items appear highlighted or in reverse video. To deselect an item, select another item.

Using the Keyboard

Keyboard

If you are electing to use only a keyboard, you should know the keyboard shortcuts. A keyboard shortcut is a single keystroke or combination of keystrokes that execute a command. Table 3 lists the keyboard shortcuts.

Table 3: Keyboard Shortcuts

Keys	Function
Alt + Space Bar	Open the Control menu.
Alt + F4	Close the active window.
Alt + F4 or Esc	Cancel a Dialog box.
Alt + Tab	Switch applications.
Alt + Print Screen	Copy an image of the active window to the clipboard.
Alt + x	Select an option or button by x (the underlined letter in the word).
Shift + Tab	Move to the previous field.
Tab	Move to the next field.
Ctrl + Esc	Open the Task list in Windows 3.1. Open the Start menu in Windows 95.
F10	Move to the Menu bar.

Notes

Notes

Notes

JOHNSON CONTROLS

Controls Group
507 E. Michigan Street
P.O. Box 423
Milwaukee, WI 53201

FAN 637.5
HVAC PRO for Windows User's Manual
Release 7.00
Printed in U.S.A.